

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
3 March 2005 (03.03.2005)

PCT

(10) International Publication Number
WO 2005/018804 A1

(51) International Patent Classification⁷: **B01J 23/28**,
23/30, C07C 51/225, 51/25, 5/48, 67/05

PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(21) International Application Number:
PCT/GB2004/003302

(22) International Filing Date: 30 July 2004 (30.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(30) Priority Data:
60/496,668 21 August 2003 (21.08.2003) US

Declarations under Rule 4.17:

(71) Applicant (*for all designated States except US*): BP
CHEMICALS LIMITED [GB/GB]; Chertsey Road,
Sunbury-on-Thames, Middlesex TW16 7BP (GB).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): BRAZDIL, James,
Frank [US/US]; 22W061 Marston Avenue, Glen Ellyn, IL
60137 (US). GEORGE, Richard, J. [US/US]; 216 Fox
Chase Drive North, Oswego, IL 60543 (US). ROSEN,
Bruce, I. [US/US]; 905 S. Knight, Park Ridge, IL 60068
(US).

(74) Agent: BROOKE, Caron; BP International Limited,
Chertsey Road, Sunbury-on-Thames, Middlesex TW16
7LN (GB).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations* AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations*

— *of inventorship (Rule 4.17(iv)) for US only*

Published:

— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: CATALYST COMPOSITION AND USE THEREOF IN ETHANE OXIDATION

(57) Abstract: A catalyst composition and its use for the oxidation of ethane to ethylene and acetic acid which comprises (i) a support, and (ii) in combination with oxygen, the elements molybdenum, vanadium and niobium, optionally tungsten and a component Z, which is one or more metals of Group 14 of the Periodic Table of Elements; a, b, c, d and e represent the gram atom ratios of the elements Mo, W, Z, V and Nb respectively, such that $0 < a \leq 1$; $0 \leq b < 1$ and $a + b = 1$; $0.05 < c \leq 2$; $0 < d \leq 2$; and $0 < e \leq 1$.

WO 2005/018804 A1